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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

JOLLEY, KIRSTEN

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/606,938

Applicant(s)

PARK ET AL.

Examiner

Kirsten C Jolley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 11 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-17 and 19-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6/27/03
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restriction*

1. Applicant's election with traverse of Group I in the reply filed on September 9, 2004 is acknowledged. The traversal is on the ground(s) that claims 11 and 18 are so closely related to elected claims 1-10, 12-17, and 19-24 that they should remain in the same application. Applicant argues that there have been no references cited to show any necessity for requiring restriction and it is believed that the Examiner would find references containing both method and product claims in the same field of technology. Applicant also argues that evaluation of both sets of claims would not provide an undue burden upon the Examiner in comparison with the additional expense and delay to Applicant in having to protect the additional subject matter recited by Group II claims in filing a divisional application.

This is not found persuasive because the considerations used for examining method claims are different than those used for examining product claims. Product claims are examined based on the properties of the final article produced, not on the method used to create the article. The searches for the two classes of invention are not necessarily the same. When examining a claim directed to a method of coating, it is necessary to find the process steps of the coating method. When examining claims directed to a coated product, the applicable art includes art directed to Applicant's final coated substrate produced by any method that would reasonably give that same product. Therefore, there is a burden in examining two classes of invention and in considering the different issues that arise in examining method versus article claims.

The requirement is still deemed proper and is therefore made FINAL.

***Claim Objections***

2. Claims 1 and 23 are objected to because of the following informalities:

In claim 1, line 6, there is a bracket at the end of the line which appears to be a typographical error.

In claim 23, line 2, "onto the body bue use" appears to comprise a typographical error. For the purpose of examination, "bue" has been interpreted as -by--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 5-10 and 12-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 5-6 and 12-13, the claims are vague and indefinite because it is not known whether the concentrations in ppm are calculated by volume or by weight.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2 and 19-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamaguchi et al. (US 5,753,322).

Yamaguchi et al. discloses a method of providing antibacterial activity to a surface of an aluminum building material using nano-sized metal particles, comprising: coating a volatile electroplating solution comprising nano-sized metal particles of copper, silver or platinum; and then baking the coated body such that the nano-sized metal particles are deposited on the body (col. 10, lines 45-59). Yamaguchi et al. states that the size and shape of the fine antibacterial metal particles are the same as for fine particles of photocatalytically active semiconductor particles also included in the coating. Yamaguchi et al. also teaches that the antibacterial metal may be applied as a coating by means of sol-gel method or plating method, in addition to others (col. 7, lines 18-23), followed by subsequent steps of washing with water and baking (col. 8, lines 15-19). Example 3 illustrates that the electroplating coating is a volatile solution, and that baking occurs at 190 C for 40 minutes.

As to claim 2, it is noted that necessarily be dried, at least somewhat, after coating and prior to baking.

As to claims 19-21, Yamaguchi et al. teaches that the size of the fine particles is preferably in the range of 5-10 nm (col. 13, lines 38-40).

7. Claims 1-2, 19-22, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishida et al. (US 5,897,673).

Nishida et al. discloses a method of immersing fiber samples into an aqueous solution comprising silver ions, such as silver nitrate, then subjecting the samples to ion-exchange reaction thus reducing the silver ions to silver metal particles (see Example 1 and col. 7-8), and then thermally treating the coated samples resulting in fiber samples containing fine silver particles.

As to claims 19-21, Nishida et al. teaches that the fine silver particles in Example 1 have a mean particle size of 0.02  $\mu\text{m}$ , or 20 nm, which falls within Applicant's claimed ranges.

### *Claim Rejections - 35 USC § 103*

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3-9 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al.

As to claims 3-4, while Yamaguchi et al. discloses an exemplary baking step at 190 C for 40 minutes in Example 3, this temperature is merely exemplary and is not limiting. It is well known that temperature is a result-effective variable depending upon the length of time of heating, the particular materials used, desired coating characteristics, etc. It is well settled that determination of optimum values of cause effective variables such as these process parameters is within the skill of one practicing in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

As to claims 5-6 and 12-13, Yamaguchi et al. teaches that the total amount of antibacterial metal particles plus semiconductor particles is in the range of 0.01-100% by weight (col. 10, lines 59-67). The range of 0.01-100% corresponds to  $100-1 \times 10^6$  ppm, therefore Yamaguchi et al. teaches a range overlapping the claimed range. Overlapping ranges are *prima facie* evidence of obviousness. It would have been obvious to one having ordinary skill in the art to have selected the portion of Yamaguchi et al.'s concentration range that corresponds to the claimed range. *In re Malagari*, 184 USPQ 549 (CCPA 1974).

As to claims 9 and 16, Yamaguchi et al. discloses that its treated aluminum building material may be any building structure or fixture, for example in a hospital building (col. 1). It would have been obvious to have coated any objects in a hospital building that are typically made of aluminum, such as an air conditioner, refrigerator, or washing machine, with an antibacterial coating of Yamaguchi et al.'s invention with the expectation of improved antibacterial activity within the hospital.

10. Claims 3-8, 10, 12-15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishida et al.

As to claims 3-4, while Nishida et al. discloses an exemplary heat treating step at 180 C for 30 minutes in Example 1, this temperature is merely exemplary and is not limiting. It is well known that temperature is a result-effective variable depending upon the length of time of heating, the particular materials used, desired product characteristics, etc. It is well settled that determination of optimum values of cause effective variables such as these process parameters is within the skill of one practicing in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

As to claims 5-6 and 12-13, Nishida et al. is silent with regard to the concentration of silver particles in the aqueous solution before heat treating. It would have been obvious for one having ordinary skill in the art to have determined the optimum concentration depending upon the end use and desired level of antibacterial activity of the fibers.

As to claims 10 and 17, it is noted that the silver particle-containing fibers of Nishida et al.'s invention may be used to make air filters (col. 22, lines 27-63).

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tomioka et al. (US 5,494,505), Kim (US 2004/0137213), Lee et al. (US 2004/0147618), Yan et al. (US 6,379,712), Maeoka et al. (US 2003/0094102), and Shigeru et al. (US 6,180,162) are cited to illustrate the closest state of the prior art with respect to the claimed invention.


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten C Jolley whose telephone number is 571-272-1421. The examiner can normally be reached on Monday to Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck can be reached on 571-272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Kirsten C Jolley  
Patent Examiner  
Art Unit 1762

kcj